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ANASTASIA STEWART

Innovative Research in Thermal Imaging for Biology and Medicine IGI Global

Providing easy-to-access information, this unique sourcebook covers the wide range of topics that a researcher must be familiar with in order to become a successful experimental scientist. Perfect for aspiring as well as practicing professionals in the medical and biological sciences it discusses a broad range of topics that are common, yet not traditionally considered part of formal curricula. The information presented also facilitates communication across conventional disciplinary boundaries, in line with the increasingly multidisciplinary nature of modern research projects. Perfect for students with various professional backgrounds providing a broad scientific perspective Easily accessible, concise material makes learning about diverse methods achievable in today's fast-paced world

Ultrasound Interactions in Biology and Medicine OUP USA

Here is a new edition of one of the first texts specifically designed to provide students of medicine and biology with a treatment of physics related to their fields of study. Assuming a basic understanding of physics, it carefully develops ideas from first principles, using calculus and statistics when necessary but avoiding complex mathematics.

Research Films in Biology, Anthropology, Psychology, and Medicine Springer Science+Business Media

This new title in the well-established "Quantitative Network Biology" series includes innovative and existing methods for analyzing network data in such areas as network biology and chemoinformatics. With its easy-to-follow introduction to the theoretical background and application-oriented chapters, the book demonstrates that R is a powerful language for statistically analyzing networks and for solving such large-scale phenomena as network sampling and bootstrapping. Written by editors and authors with an excellent track record in the field, this is the ultimate reference for R in Network Analysis.

Research Films in Biology, Anthropology, Psychology, and Medicine IGI Global

This textbook presents epidemiology in a practical manner, contextualized with discussions of theory and ethics, so that students and professionals from all academic backgrounds may develop a deep appreciation for how to conduct and interpret epidemiological research. Readers will develop skills to: -Search for and appraise literature critically, -Develop important research questions, -Design and implement studies to address those questions, -Perform and interpret fundamental statistical estimations and tests, -Consider the ethical implications of all stages of research, -Report findings in publications, and -Advocate for change in the public health setting. Epidemiology is and will remain a discipline in motion, and this textbook aims at reflecting this dynamism and keeping pace with its momentum. This textbook is not only a classroom tool with high utility but also an essential reference and guide for those engaging in research involving human subjects.

Healthcare and Biomedical Technology in the 21st Century CRC Press

Throughout its development in the past few years, controversy and debate have surrounded stem cell research.

Epistemology of the Cell Springer Nature

"Fractals in Biology and Medicine" explores the potential of fractal geometry for describing and understanding biological organisms, their development and growth as well as their structural design and functional properties. It extends these notions to assess changes associated with disease in the hope to contribute to the understanding of pathogenetic processes in medicine. The book is the first comprehensive presentation of the importance of the new concept of fractal geometry for biological and medical sciences. It collates in a logical sequence extended papers based on invited lectures and free communications presented at a symposium in Ascona, Switzerland, attended by leading scientists in this field, among them the originator of fractal geometry, Benoit Mandelbrot. "Fractals in Biology and Medicine" begins by asking how the theoretical construct of fractal geometry can be applied to biomedical sciences and then addresses the role of fractals in the design and morphogenesis of biological organisms as well as in molecular and cell biology. The consideration of fractal structure in understanding metabolic functions and pathological changes is a particularly promising avenue for future research.

Systematic Springer Science & Business Media

Healthcare and Biotechnology in the 21st Century: Concepts and Case Studies introduces students not pursuing degrees in science or engineering to the remarkable new applications of technology now available to physicians and their patients and discusses how these technologies are evolving to permit new treatments and procedures. The book also elucidates the societal and ethical impacts of advances in medical technology, such as extending life and end of life decisions, the role of genetic testing, confidentiality, costs of health care delivery, scrutiny of scientific claims, and provides background on the engineering approach in healthcare and the scientific method as a guiding principle. This concise, highly relevant text enables faculty to offer a substantive course for students from non-scientific backgrounds that will empower them to make more informed decisions about their healthcare by significantly enhancing their understanding of these technological advancements.

Evolutionary Medicine and Health Academic Press

A brilliant young scientist introduces us to the fascinating field that is changing our understanding of how the body works and the way we can approach healing. SYSTEMATIC is the first book to introduce general readers to systems biology, which is improving medical treatments and our understanding of living things. In traditional bottom-up biology, a biologist might spend years studying how a single protein works, but systems biology studies how networks of those proteins work together--how they promote health and how to remedy the situation when the system isn't functioning properly. Breakthroughs in systems biology became possible only when powerful computer technology enabled researchers to process massive amounts of data to study complete systems, and has led to progress in the study of gene regulation and inheritance, cancer drugs personalized to an individual's genetically unique tumor, insights into how the brain works, and the discovery that the bacteria and other microbes that live in the gut may drive malnutrition and obesity. Systems biology is allowing us to understand more complex phenomena than ever before. In accessible prose, SYSTEMATIC sheds light not only on how systems within the body work, but also on how research is yielding new kinds of remedies that enhance and harness the body's own defenses.

Medical Cell Biology Academic Press

Research Films in Biology, Anthropology, Psychology, and Medicine is an encyclopedic account of the many uses of research films in the fields of biology, anthropology, psychology, and medicine. The book looks at cinemicrography, the making of human record films, and quantitative methods inherent in all scientific cinematography such as medical and X-ray cinematography. This volume is organized into three sections encompassing 10 chapters and begins by considering the definition of research film and scientific cinematography, touching on topics such as the advantages and limitations of scientific cinematography and methods used to preserve and store the research film. The next chapters discuss the fundamental principles of cinemicrography as a research tool; the value of cinematography in biological investigations, including the study of animal behavior; and the theoretical and practical considerations in the use of cinematography in the human sciences, such as anthropology, psychology, and psychiatry. The book also methodically introduces the reader to medical applications of cinematography and the techniques of X-ray cinematography, and then concludes with relevant examples of the use of cinematography in medical research and diagnosis. This book is a valuable resource for scientists and cinematographers.

Handbook of Research on Systems Biology Applications in Medicine Macmillan Higher Education

This first major reference work dedicated to the manifold industrial and medical applications of bacteriophages provides both theoretical and practical insights into the emerging field of bacteriophage biotechnology. The book introduces to bacteriophage biology, ecology and history and reviews the latest technologies and tools in bacteriophage detection, strain optimization and nanotechnology. Usage of bacteriophages in food safety, agriculture, and different therapeutic areas is discussed in detail. This book serves as essential guide for researchers in applied microbiology, biotechnology and medicine coming from both academia and industry.

Chemical Relaxation in Molecular Biology CRC Press

Medical Cell Biology, Third Edition, focuses on the scientific aspects of cell biology important to medical students, dental students, veterinary students, and prehealth undergraduates. With its National Board-type questions, this book is specifically designed to prepare students for this exam. The book maintains a concise focus on eukaryotic cell biology as it relates to human and animal disease, all within a manageable 300-page format. This is accomplished by explaining general cell biology principles in the context of organ systems and disease. This updated version contains 60% new material and all new clinical cases. New topics include apoptosis and cell death from a neural perspective; signal transduction as it relates to normal and abnormal heart function; and cell cycle and cell division related to cancer biology. 60% New Material! New Topics include: Apoptosis and cell death from a neural perspective Signal transduction as it relates to normal and abnormal heart function Cell cycle and cell division related to cancer biology All new clinical cases Serves as a prep guide to the National Medical Board Exam with sample board-style questions (using Exam Master(R) technology); www.exammaster.com Focuses on eukaryotic cell biology as it related to human disease, thus making the subject more accessible to pre-med and pre-health students

R for Medicine and Biology Springer Science & Business Media

Due to the ever increasing interest in the use of non-invasive ultrasonic methods in medical diagnostics on the one hand and the specific effects of ultrasound in medical therapy on the other, the questions of safety and optimal applications are topical and of great importance. For this reason the symposium "Ultrasound Interaction in Biology and Medicine," initiated and supported by the "International Organization of Medical Physics," took place. The organizers were the Institute of Applied Biophysics of the Martin-Luther-University, Halle (Saale), German Democratic Republic, in association with the Society for Physical and Mathematical Biology of the GDR along with other scientific organizations. Renowned and internationally noted specialists in the field of ultrasonics reported on the latest findings regarding the biological interaction of ultrasound, which promised future improvements in the methods of ultrasonic diagnostics and gave and up-to-date insight into the biological effectiveness of ultrasound. We are pleased to be able to publish selected contributions to this symposium collected in one volume. The methods of investigation, theoretical considerations and results concerning the interaction of ultrasound on molecular, cellular and system levels contained herein will remain up-to-date for a long time to come, providing thought provoking material for further inter-disciplinary basic research and medical application.

Fractals in Biology and Medicine Springer Science & Business Media

Each chapter consists of basic statistical theory, simple examples of S-PLUS code, plus more complex examples of S-PLUS code, and exercises. All data sets are taken from genuine medical investigations and will be available on a web site. The examples in the book contain extensive graphical analysis to highlight one of the prime features of S-PLUS. Written with few details of S-PLUS and less technical descriptions, the book concentrates solely on medical data sets, demonstrating the flexibility of S-PLUS and its huge advantages, particularly for applied medical statisticians.

Analyzing Medical Data Using S-PLUS John Wiley & Sons

Most medical researchers, whether clinical or non-clinical, receive some background in statistics as undergraduates. However, it is most often brief, a long time ago, and largely forgotten by the time it is needed. Furthermore, many introductory texts fall short of adequately explaining the underlying concepts of statistics, and often are divorced

Research in Medical and Biological Sciences Infobase Publishing

Large biological data, which are often noisy and high-dimensional, have become increasingly prevalent in biology and medicine. There is a real need for good training in statistics, from data exploration through to analysis and interpretation. This book provides an overview of statistical and dimension reduction methods for high-throughput biological data, with a specific focus on data integration. It starts with some biological background, key concepts underlying the multivariate methods, and then covers an array of methods implemented using the mixOmics package in R. Features: Provides a broad and accessible overview of methods for multi-omics data integration Covers a wide range of multivariate methods, each designed to answer specific biological questions Includes comprehensive visualisation techniques to aid in data interpretation Includes many worked examples and case studies using real data Includes reproducible R code for each multivariate method, using the mixOmics package The book is suitable for researchers from a wide range of scientific disciplines wishing to apply these methods to obtain new and deeper insights into biological mechanisms and biomedical problems. The suite of tools introduced in this book will enable students and scientists to work at the interface between, and provide critical collaborative expertise to, biologists, bioinformaticians, statisticians and clinicians.

Nanotechnology in Biology and Medicine Birkhäuser

The second edition of *Nanotechnology in Biology and Medicine* is intended to serve as an authoritative reference source for a broad audience involved in the research, teaching, learning, and practice of nanotechnology in life sciences. This technology, which is on the scale of molecules, has enabled the development of devices smaller and more efficient than anything currently available. To understand complex biological nanosystems at the cellular level, we urgently need to develop a next-generation nanotechnology tool kit. It is believed that the new advances in genetic engineering, genomics, proteomics, medicine, and biotechnology will depend on our mastering of nanotechnology in the coming decades. The integration of nanotechnology, material sciences, molecular biology, and medicine opens the possibility of detecting and manipulating atoms and molecules using nanodevices, which have the potential for a wide variety of biological research topics and medical uses at the cellular level. This book presents the most recent scientific and technological advances of nanotechnology for use in biology and medicine. Each chapter provides introductory material with an overview of the topic of interest; a description of methods, protocols, instrumentation, and applications; and a collection of published data with an extensive list of references for further details. The goal of this book is to provide a comprehensive overview of the most recent advances in instrumentation, methods, and applications in areas of nanobiotechnology, integrating interdisciplinary research and development of interest to scientists, engineers, manufacturers, teachers, and students.

Computational Network Analysis with R National Academies Press

"Fractals in Biology and Medicine" explores the potential of fractal geometry for describing and understanding biological organisms, their development and growth as well as their structural design and functional properties. It extends these notions to assess changes associated with disease in the hope to contribute to the understanding of pathogenetic processes in medicine. The book is the first comprehensive presentation of the importance of the new concept of fractal geometry for biological and medical sciences. It collates in a logical sequence extended papers based on invited lectures and free communications presented at a symposium in Ascona, Switzerland, attended by leading scientists in this field, among them the originator of fractal geometry, Benoit Mandelbrot. "Fractals in Biology and Medicine" begins by asking how the theoretical construct of fractal geometry can be applied to biomedical sciences and then addresses the role of fractals in the design and morphogenesis of biological organisms as well as in molecular and cell biology. The consideration of fractal structure in understanding metabolic functions and pathological changes is a particularly promising avenue for future research.

Bacteriophages Springer Science & Business Media

This volume is number four in a series of proceedings volumes from the International Symposia on Fractals in Biology and Medicine in Ascona, Switzerland which have been inspired by the work of Benoit Mandelbrot seeking to extend the concepts towards the life sciences. It highlights the potential that fractal geometry offers for elucidating and explaining the complex make-up of cells, tissues and biological organisms either in normal or in pathological conditions.

Practical Statistics for Medical Research CRC Press

This book is concerned with issues relevant to work in academia in Medical Physics, Medical Engineering and Bioengineering. It is aimed mainly at current and prospective university staff and PhD students, but there is also much that will be of interest to NHS staff, particularly those involved in teaching, working with academics or considering a clinical academic career, and similarly to staff in industry. There are four main sections: the academic career from PhD student to post-retirement, practical issues in research such as how to write a PhD thesis and project management, research funding in universities and also in the NHS and industry, and a final section on teaching. The perspective is UK based and aimed at Physicists and Engineers working in medicine and healthcare. However, much of the general advice is relevant to science and engineering more widely and to an international audience. This is a practical 'how to' handbook; consequently, there are few references and the style is informal. Advice and guidance are often based on the personal experience of the authors and their colleagues, with the approach of 'what would I like to have been told when I started in this area'. Therefore, it takes a realistic view of academic life, the pitfalls as well as the prizes.

Academic Practice Academic Press

Research in Medical and Biological Sciences covers the wide range of topics that a researcher must be familiar with in order to become a successful biomedical scientist. Perfect for aspiring as well as practicing professionals in the medical and biological sciences, this publication discusses a broad range of topics that are common yet not traditionally considered part of formal curricula, including philosophy of science, ethics, statistics, and grant applications. The information presented in this book also facilitates communication across conventional disciplinary boundaries, in line with the increasingly multidisciplinary nature of modern research projects. Covers the breadth of topics that a researcher must understand in order to be a successful experimental scientist Provides a broad scientific perspective that is perfect for students with various professional backgrounds Contains easily accessible, concise material about diverse methods Includes extensive online resources such as further reading suggestions, data files, statistical tables, and the StaTable application package Emphasizes the ethics and statistics of medical and biological sciences